UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/846,899	05/01/2001	Melanie Russell	FOM-117.01	4640

25181 7590 07/07/2003

FOLEY HOAG, LLP
PATENT GROUP, WORLD TRADE CENTER WEST
155 SEAPORT BLVD
BOSTON, MA 02110

EXAMINER	
WACHSMAN, HAL D	

ART UNIT	PAPER NUMBER
2857	

DATE MAILED: 07/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/846,899	Applicant(s) RUSSELL ET AL.	
	Examiner Hal D Wachsman	Art Unit 2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 May 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) *8-28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 May 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. Applicant's election with traverse of species (group) I in Paper No. 4 is acknowledged. The traversal is on the ground(s) that examination of all claims simultaneously would place no undue burden on the Examiner, as examination of the claims of Groups II-VI necessarily entail a search of the subject matter of Group I. This is not found persuasive because a burdensome search is not a requirement for a species restriction. The restriction satisfies MPEP 806.04(f) which states that claims are restricted to species by mutually exclusive characteristics. For example, claim 16 of species IV cites "at least one sensor to measure the clinker input to the finish mill" which is a limitation of species IV that is not found in claim 1 of species I for example. Claim 1 cites "computing the cost of clinker based on the computed clinker production" which is a limitation that is not found in claim 16 of species IV for example. Thus, there is mutual exclusivity as required by MPEP 806.04(f).

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 8-28 stand withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 4.

3. The drawings are objected to for the reasons stated on the attached PTO-948 form. Appropriate correction is required.

4. The declaration indicates that priority is being claimed for provisional application 60/235,491 however there is statement with respect to this claim for priority on page 1 of the specification. In addition, the Office records shows inventor Melanie Russell being

the inventive entity for this provisional application. However, the instant application has two inventors, Melanie Russell and Fayyez Hussain. Appropriate explanation/correction is required.

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

6. The use of the trademark I/A Series (see page 22 of the specification) has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's Admissions of the prior art in view of Beaverstock et al. (5, 134,574).

As per claim 1, the Applicant's Admissions of the prior art (figure 1, page 1 Lines 11-15, page 8, lines 19-23, page 9, lines 16-23) disclose "computing clinker production at the kiln output". The Applicant's Admissions of the prior art (figure 1, page 1, lines 12-22, page 8, lines 19-23, page 9, lines 16-23) disclose "computing the cost of clinker based on the computed clinker production". With respect to the displaying step, the above cited sections of the Applicant's Admissions disclose this step with the exception of explicitly disclosing that at least one of the clinker production and the cost of clinker as a function of time is being displayed. However, Beaverstock et al. (Abstract, col. 4 lines 1-4, 24-26, col. 10 lines 11-14) teach the displaying of production and the cost of the product being produced as a function of time in a process plant and thus would be of use in the monitoring of a cement production process. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the techniques of Beaverstock et al. to the Applicant's Admissions of the prior art because as taught by Beaverstock et al. (col. 4 lines 11-20) such dynamic performance measurements are not only more accurate than prior art financial based

performance measurements by being based on in-process information instead of post-process quantity of product made, but are also more useful to operations personnel by being provided/displayed in a timely (real time) manner which enables operations personnel to readily make necessary adjustments to increase performance of current plant operations.

As per claim 5, the Applicant's Admissions of the prior art (figure 1, page 9, lines 4-16 of the specification) disclose the coal being fed into a kiln but does not explicitly disclose the measurment of the feed rate of the kiln coal. However, Beaverstock et al. (col. 4 lines 46-49, col. 5 lines 22-25) teach that controllable aspects of the process include flow volume and flow rate and that there are sensors to detect volume, weight, flow volume, flow rate as well as other desired physical and/or chemical aspects of the process. Therefore, Beaverstock et al. clearly teaches the capability to measure the feed rate of whatever may be desired in a process plant. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the teachings of Beaverstock et al. to the Applicant's Admissions of the prior art as specified above because knowing the feed rate of the fuel being used, such as coal, would be important in then determining from that how much fuel is being used to make the clinker and to factor in the cost of that fuel.

As per claim 7, with respect to the deriving step, the computation of clinker production and the cost of clinker has already been addressed in claim 1 above. It appears that the Applicant's Admissions of the prior art does not clearly disclose the comparing the derived measure to a threshold and generating an alarm steps. However,

Beaverstock et al. (figure 7 – blocks 92 and 93, col. 16 lines 4-12) teach the comparing step and Beaverstock et al. (Abstract – block 76, col. 14 lines 19-36) teach the generating an alarm step. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the techniques of Beaverstock et al. to the Applicant's Admissions of the prior art because as taught by Beaverstock et al. (col. 4 lines 11-20) such dynamic performance measurements are not only more accurate than prior art financial based performance measurements by being based on in-process information instead of post-process quantity of product made, but are also more useful to operations personnel by being provided/displayed in a timely (real time) manner which enables operations personnel to readily make necessary adjustments to increase performance of current plant operations.

9. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's Admissions of the prior art in view of Beaverstock et al. (5,134,574) as applied to claim 1 above, and further in view of Hansen et al. (5,569,030).

As per claim 2, Hansen et al. (col. 2 lines 12-15, 19, 20) teach that on the Average about 7-10% (but as high as about 17%) of the raw material feed on a dry basis is blown back from the drying zone as dust and that high dust loss means loss of efficiency of raw materials. Hansen et al. (col. 3 lines 65-67, col. 8 lines 43-47) further teach that reduced dust loss allows an associated reduction in the amount of raw material for the same amount of clinker production and that reduced dust loss enhances the efficiency of cement clinker production not only by decreasing the raw material/clinker production ratio but concomitantly allows for enhanced energy/fuel

efficiency. Consequently, from the above, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to measure the feed to the kiln and the dust being lost taking a difference between the two, because it would provide what is the actual effective feed that is being received for making clinkers for use in productivity determinations and determining the efficiency of the system. In addition, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the techniques of Hansen et al. to the Applicant's Admissions of the prior art and the invention of Beaverstock et al. as specified above because as taught by Hansen et al. (col. 2 lines 18-22) high dust loss not only means loss of efficiency of use of raw materials but it also requires greater capital investment in dust collection equipment and loss of energy efficiency.

As per claim 3, the Applicant" Admissions of the prior art (figure 1, page 8 lines 10-20 of the specification) disclose raw meal input to a kiln with the exception of explicitly disclosing that this raw meal input is being measured. However, Beaverstock et al. (col. 4 lines 46-49, col. 5 lines 22-25) teach that controllable aspects of the process include flow volume and flow rate and that there are sensors to detect volume, weight, flow volume, flow rate as well as other desired physical and/or chemical aspects of the process. Therefore, Beaverstock et al. clearly teaches the capability to measure the feed rate of whatever may be desired in a process plant. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the teachings of Beaverstock et al. to the Applicant's Admissions of the prior art and Hansen et al. as specified above because knowing the raw meal input into the kiln

would be important in then determining from that how much raw meal input is being used to make the clinker and to factor in the cost of that raw meal input.

As per claim 4, the Applicant" Admissions of the prior art (figure 1, page 8 lines 12-20 of the specification) disclose slurry input to a kiln with the exception of explicitly disclosing that this raw slurry input is being measured. However, Beaverstock et al. (col. 4 lines 46-49, col. 5 lines 22-25) teach that controllable aspects of the process include flow volume and flow rate and that there are sensors to detect volume, weight, flow volume, flow rate as well as other desired physical and/or chemical aspects of the process. Therefore, Beaverstock et al. clearly teaches the capability to measure the feed rate of whatever may be desired in a process plant. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the teachings of Beaverstock et al. to the Applicant's Admissions of the prior art and Hansen et al. as specified above because knowing the feed rate of the slurry be would be important in then determining from that how much slurry is being used to make the clinker and to factor in the cost of that slurry in clinker production.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's Admissions of the prior art in view of Beaverstock et al. (5,134,574) as applied to claim 1 above, and further in view of Taulbee (2002/0050094).

As per claim 6, Taulbee (page 1, paragraph 0007) teaches the computation of a credit based on waste fuel. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the techniques of Taulbee to the Applicant's Admissions of the prior art and the invention of Beaverstock

et al. as specified above because as taught by Taulbee (page 1 paragraphs 0003, 0007) it would provide incentives to encourage the cleanup of fugitive coal fines which represent an environmental hazard as well as an expensive disposal problem.

11. The following references are cited as being art of general interest: Harth et al. which disclose a cost function generator, Van Der Vegt et al. which disclose controlling an industrial process using financial analysis and Krist et al. which disclose real-time economic optimizing of manufacturing process control.

12. No claims are allowed.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hal D Wachsman whose telephone number is 703-305-9788. The examiner can normally be reached on Monday to Friday 7:00 A.M. to 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on 703-308-1677. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Hal D Wachsman
Primary Examiner
Art Unit 2857

HW
June 29, 2003

UNITED STATES DEPARTMENT OF COMMERCE
U.S. Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450

APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.

EXAMINER

ART UNIT	PAPER
	5

DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

Hal D Wachsman
Primary Examiner
Art Unit: 2857